

## CLAIMS

What is claimed is:

1. A protocol diagnostic system, comprising:
  - a data stream monitor component that accesses raw network data and copies at least one protocol specific subset of the raw network data; and
  - a diagnostics engine comprising at least one protocol state compressor that analyzes the at least one protocol specific subset of the raw network data, the protocol specific subset of raw network data being correlated with the protocol state compressor, the diagnostics engine adapted to determine the condition of network connectivity.
2. The protocol diagnostic system of claim 1, the data stream monitor component adapted to utilize at least one lexical rule set associated with the at least one protocol state compressor to determine subsets of the raw network data to copy.
3. The protocol diagnostic system of claim 1, the diagnostics engine further comprising at least one lexical rule set.
4. A method that facilitates network diagnostics, comprising:
  - accessing raw real-time network data;
  - selectively providing subsets of the raw real-time network data to protocol state compressors;
  - using the protocol state compressors to analyze the respective data subsets; and
  - diagnosing health status of a system based at least in part upon the analysis of at least one of the protocol state compressors.
5. The method of claim 4, the act of selectively providing subsets of raw data based at least in part upon lexical rule sets corresponding to the protocol state compressor.

6. The method of claim 4, further comprising at least one of the following acts:  
diagnosing a network connectivity problem based at least in part upon the analysis  
of at least one of the protocol state compressors; and  
initiating corrective action associated with the network connectivity problem.
7. The method of claim 4, further comprising at least one of the following acts:  
storing information associated with the health status of the system; and  
providing information to a user regarding the health status of the system.
8. A computer network diagnostic system, comprising:  
a data stream monitor/multiplex component that accesses real-time network data,  
selectively determines at least one subset of the real-time network data to multiplex based  
at least in part upon at least one lexical rule set;  
a data stream distribution engine that demultiplexes the multiplexed data based at  
least in part upon the at least one lexical rule set; and,  
a diagnostics engine having a plurality of protocol state compressors, the protocol  
state compressor being associated with at least one of lexical rule set, the protocol state  
compressors analyzing their respective subsets of demultiplexed data received from the  
data stream distribution engine, the diagnostics engine further including an event  
correlator/inference engine adapted to receive results of the analysis of the plurality of  
protocol state compressors, the event correlator/inference engine being further adapted to  
correlate the results to detect a system problem.
9. The protocol diagnostic system of claim 8, the event correlator/inference engine  
being further adapted to diagnose a potential source of the system problem.
10. The protocol diagnostic system of claim 9, the event correlator/inference engine  
being further adapted to initiate a corrective action related to the system problem.

11. The protocol diagnostic system of claim 9, the event correlator/inference engine utilizing at least one of a neural network and an expert system to facilitate diagnosis of the potential source of the system problem.

12. The protocol diagnostic system of claim 8, the diagnostics engine further comprising the at least one lexical rule set.

13. A method that facilitates network diagnostics, comprising:  
accessing at least one lexical rule set coinciding with a protocol to be monitored  
by a corresponding protocol state compressor;  
copying raw data frames coinciding with the at lexical rule set;  
multiplexing the copied raw data frames;  
demultiplexing the copied raw data frames;  
providing the copied raw data frames to the protocol state compressor;  
using the protocol state compressor to analyze corresponding raw data frames  
utilizing at least in part upon the corresponding lexical rule set; and  
correlating information received from the protocol state compressor to facilitate  
diagnosis of health status of a system.

14. The method of claim 13, further comprising at least one of the following acts:  
determining whether an additional protocol to be monitored has been added; and  
adding a protocol state compressor and corresponding lexical rule set associated  
with the additional protocol.

15. The method of claim 13, further comprising at least one of the following acts:  
initiating corrective action based at least in part upon the correlated information;  
and  
providing information to a user regarding the health status of network  
connectivity.

16. The method of claim 13, further comprising at least one of the following acts:  
storing historical information regarding the health status of network connectivity;  
determining potential sources of a problem associated with network connectivity;  
accessing historical information regarding the health status of network

connectivity;

calculating a probability of utility based at least in part upon the potential sources  
of the problem and accessed historical information; and,

consecutively initiating corrective action based at least in part upon the  
probability of utility.

17. A diagnostic engine for a server of a computer system, comprising:

a plain language notification data information store storing plain language  
notification information associated with a plurality of potential server problems;

a protocol specific event information data store storing information associated  
with server health status; and,

a self healing component adapted to analyze information stored in the protocol  
specific event information to determine at least one of appropriate corrective action and  
appropriate plain language notification, the plain language notification based at least in  
part upon information stored in the plain language notification data store.

18. A data packet adapted to be received by a self-healing component, the data packet  
comprising:

a protocol specific identifier; and,

protocol specific event data associated with at least one of a network problem and  
network status, the protocol specific event data being employed by the self-healing  
component to facilitate at least one of appropriate corrective action and appropriate plain  
language notification.

19. A computer readable medium having computer usable components for a protocol diagnostics engine, comprising:

at least one protocol state compressors, the protocol state compressor being associated with at least one of lexical rule set, the protocol state compressor analyzing respective subsets of demultiplexed data received from the data stream distribution engine; and,

an event correlator/inference engine adapted to receive results of the analysis of the protocol state compressor, the event correlator/inference engine being further adapted to correlate the results to detect a system problem.

20. A protocol diagnostic system, comprising:

means for real-time accessing of network data;

means for copying a subset of the network data; and

means for analyzing the subset of network data, the analysis facilitating determining network status.